

Powerful Tsunami's Impact on Coral Reefs Was Hit and Miss

Early surveys suggest that coral reefs around the Indian Ocean survived December's tsunami in better shape than many had feared. In the sites where researchers have looked, "only a few areas were severely damaged, and the rest should recover rapidly in the next 5 to 10 years," says Clive Wilkinson, a marine scientist with the Australian Institute of Marine Science in Cape Ferguson. In some places, divers are already helping that recovery with restoration efforts.

In the immediate aftermath of the 26 December tsunami, Wilkinson and others feared the worst. The wave's awesome power, as well as sediment, pollutants, and debris washed onto the reefs when the wave retreated, posed major threats, says Russell Brainard, a U.S. National Oceanic and Atmospheric Administration oceanographer based in Honolulu. If eroded mud and silt buried a reef, they could destroy the corals.

Off the coast of Thailand, however, many reefs were spared. In January, volunteers and academic and government marine scientists

good condition," says Plathong. Only about 15% of the area's coral was severely damaged.

David Obura of CORDIO East Africa—a collaborative coral research program in the Indian Ocean—in Mombasa, Kenya, has similarly good news about the African coast. "We were generally surprised at the [small] and very patchy damage to the coral reef communities," he says.

Although turbid water prevented local government and academic divers from looking at six of the 10 sites in the Seychelles selected for a preliminary assessment, the survey indicated that only 13% of the coral colonies were damaged.

The reefs that were affected suffered different levels of damage, some repairable and some not. Corals were toppled over, sometimes covered with sand and rubble. In some places, meter-high sea fans were pummeled and knocked off their perches. Several reefs were littered with debris—logs, beach beds, towels, palm trees, boat engines, and beach umbrellas. These wave-driven objects "become like bulldozers," says Brainard. "They severely erode the coral habitat."

After the tsunami, Plathong realized he had to act fast to save any damaged corals. He brought a brigade of 136 volunteer divers to some of the worst places in the Similan Islands. The divers worked to right corals and were able to salvage those that hadn't slid beyond reach down the sloping sea floor. They propped up sea fans—a temporary fix until they could return with marine cement. They also removed debris, although heavy objects had to be left behind. The

repair efforts benefited in one way from the tsunami's power: The wave was so strong that potentially lethal silt and mud washed far out to sea in many areas.

Yet there were places "where the reefs were just planed off and stripped to bare rock," says Wilkinson. In another part of Thailand, three of four reefs surveyed were decimated. In some places, divers measured 5 millimeters of sediment on top of the corals. The reefs off the Tamil Nadu coast in Southeast India also appear to be severely damaged, as was coral off the Andaman and Nicobar Islands. "It will take some time before we can build a proper picture of the ecological ramifications of this disaster," says Wilkinson.

—ELIZABETH PENNISI



Uprooted. The tsunami left some reefs untouched, but in many places—as shown above—it knocked down corals of all shapes and sizes.

took to the water for a first look. They evaluated 175 sites in the Andaman Sea along the west coast of Thailand, rating each according to the degree of impact. Half or more of the coral was missing from 13% of the sites, says Thamasak Yeemin, a marine scientist from Thailand's Ramkhamhaeng University in Bangkok. About 40%, though, seemed untouched.

Also last month in Thailand, Sakanan Plathong, a marine biologist at Prince of Songkla University in Had Yai, and 60 assistants armed with cameras spent 3 weeks combing a smaller area, the Similan Islands, one of the country's best dive spots. "In general most Similan islands that are dive sites are still in

NIH Bans Industry Consulting

Responding to an uproar last year over industry consulting by staff, the National Institutes of Health this week announced a ban on all such interactions by NIH intramural scientists. Many staffers will also have to sell their stock in biotech and drug companies.

NIH took a hard look at its consulting policies, which were loosened in 1995, after a December 2003 report in the *Los Angeles Times* suggested improprieties and Congress investigated. Last year, NIH Director Elias Zerhouni proposed new limits, including a 1-year ban on all consulting. This week he followed through by releasing an interim regulation that will implement the ban until further notice. The policy does not restrict NIH employees from receiving some payments for teaching, writing, or editing.

Meanwhile, the inspector general of the Department of Health and Human Services is investigating the conduct of Trey Sunderland, an Alzheimer's disease researcher at the National Institute of Mental Health. Sunderland is said to have received more than \$500,000 from Pfizer since 1999 without first asking for approval or reporting the income.

Sunderland has accepted a job at Albert Einstein College of Medicine in New York City but has not left NIH yet. His lawyer, Robert Muse of Washington, D.C., declined to comment, but he has told NIH that its "indifference" was why Sunderland failed to file the necessary paperwork.

—JOCELYN KAISER

Call for Global Biodiversity Agency

PARIS—Researchers from around the world have endorsed a call by French President Jacques Chirac for a new international organization for biodiversity research—akin to the Intergovernmental Panel on Climate Change (IPCC)—that would sift through the science and identify priorities for nations. An IPCC-like agency could provide the field with a stronger, unified voice, says Michael Loreau of Pierre and Marie Curie University in Paris, who chaired the scientific committee of a UNESCO meeting held here last week.

The 1500 scientists and politicians attending the meeting had little to celebrate. The loss of species continues apace, and a 2002 goal of achieving a "significant reduction" in the rate of biodiversity loss by 2010 appears doomed. Besides more science, "we also need action—now," says Loreau.

—MARTIN ENSERINK